

REMARKS

Upon entry of the present Amendment-B, claims 1-17 are pending in the application, of which claims 1, 11 and 15 are independent. New claims 7-17 have been amended by the present Amendment-B.

Response to Office Action

The above-identified Office Action has been reviewed, the references carefully considered, and the Examiner's comments carefully weighed. In view thereof, the present Amendment-B is submitted.

It is contended that by the present Amendment-B, all bases of objections and rejections set forth in the Office Action have been traversed and overcome. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

Amendments Presented

In the Specification: Paragraph [0022] of the specification is amended to provide an express antecedent basis for the language of new claims 10, 14, 16.

In the Claims: New claims 7-17 have been added by this amendment. New claim 7 further defines the light guide wherein the light emitted from the emitting face is confined to a prescribed emission angle.

New claims 7-10 further define aspects of the light guide pertaining to: the sectional shape of the light guide which causes light emitted from the emitting face to be confined to a prescribed emission angle; the said line segment connecting the focal points being disposed opposite to said line segment corresponding to said emitting face and has a scattering pattern formed thereon; the end face being adapted to receive incident light thereon from a light source; and the line segment

corresponding to said emitting face of the light guide having a larger width than that of the said line segment connecting the focal points.

New independent claim 11 presents a light guide similar to claim 1, but further defining that the light emitted from the emitting face is confined to a prescribed emission angle, and that the line segment connecting the focal points is disposed opposite to said line segment corresponding to said emitting face and has a scattering pattern formed thereon. New independent claim 15 presents a light guide similar to claim 1, but further defining that the end face is adapted to receive incident light thereon from a light source. New dependent claims 12-14, 16, 17 present limitations similar to those of claims 2, and 7-10.

Applicant respectfully submits that the above amendments to the specification, claims and new claims are fully supported by the original disclosure, including the specification, claims and drawings, especially Figures 1 -4 and the discussion contained thereof at paragraphs [0007], [0010], [0022]-[0023], and [0037]. Applicant also respectfully submits that no new matter is introduced into the application by the above amendments because all of the subject matter thereof was expressly or inherently disclosed in the original application.

Claim Rejections --35 USC §102

At page 2 of the Office Action, the Examiner rejected claims 1 and 2 under 35 USC §102(b) as being anticipated by Clark (US 5,255,171).

Regarding claim 1, the Examiner has taken the position that Clark discloses a colored light source providing intensification of initial source illumination having a light guide in figure 5 having an end face, an emitting face illuminating by means of light emitting diode 22, 24, 26, in figure 6 shows how the light is reflected in an internal face of the light guide, the light guide in figures 5 has a sectional shape thereof in a direction orthogonal to the longitudinal direction of the light guide

having two parabolas curves and a line segment corresponding to the emitting face. Regarding claim 2, the Examiner states that figures 3a and 5 shows how the side face 34 of the light guide on a side emitting face is substantially parallel to the optical axis.

Applicant's Response:

Upon careful consideration, applicant respectfully traverses such rejection, and submits that claims 1 and 2 are patentably distinct over the teachings of Clark, because Clark fails to disclose (or suggest) features of the claimed invention, e.g., *a line segment connecting the focal points of said two opposite parabolas or the focal points of said two oval curves and a (different) line segment corresponding to the emitting face*, as recited in claim 1. Further, Clark's colored light source otherwise functions fundamentally differently than the claimed invention and fails to address or overcome the problem address by the claimed invention.

The Standard for Anticipation

In the case of *Motorola, Inc. v. Interdigital Technology Corp.*, 121 F. 3d 1461 (CAFC 1997), the Court of Appeals for the Federal Circuit stated:

“For a prior art reference to anticipate a claim, the reference must disclose each and every element of the claim with sufficient clarity to prove its existence in the prior art (citation omitted). ‘The (prior art) reference must describe the applicant’s claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it (citations omitted). Although this disclosure requirement presupposes the knowledge of one skilled in the art of the claimed invention, that presumed knowledge does not grant a license to read into the prior art reference teachings that are not there.’”

The above-quoted passage is consistent with many previous cases of the Federal Circuit and with MPEP 2131, which reiterate the rule that in order to anticipate a claim, a reference must teach every element of the claim.

Initially, applicant respectfully submits that the concentrator of Clark's colored light source is *fundamentally distinct* from the claimed light guide because it is arranged such that light entering

from the larger side (in cross section) is effectively converged onto the opposite smaller side (in cross section), whereas with the claimed light guide light incident on a longitudinal end face of the guide is reflected within the light guide and exits the light guide through an emitting face extending normal to the end face. Moreover, it is clear that Clark does not consider the direction of the light at the entrance / exit of his concentrator, as is apparent from the fact that he provides a diffuser 30 at the exit of the light concentrator which causes emitted light to diffuse in all directions, contrary to a primary advantage of the present invention. Correspondingly, it is clear that Clark's concentrator is not at all concerned with the problem that is addressed and overcome by the claimed invention, i.e., deterioration of the illumination of a document face when the distance between the document and the emitting face is great due to scattering of light extending over a full angle from a limited area.

It is also noted that, according to Clark's disclosure, the concentrator shown in his Fig. 5 is a variation of the concentrator in his Fig. 3 and is characterized in that light entering from the larger side undergoes only a single reflection prior to exiting through the smaller end (col. 3, lines 31-38).

Applicant generally notes that the concentrator in Clark's Fig. 5 may be used in xerographic, line-scan or area-scan imaging devices, and comprises a parabolic reflector 34 with parabolic reflecting walls 36, a group of different color LEDs 22, 24 and 26 arranged at one (larger) side or base 28 of the reflector 18, and a diffuser 30 disposed at the other (smaller) end of the reflector opposite to the LEDs such that light emitted by the LEDs is reflected by the reflector and concentrated for being output at the diffuser (col. 3, lines 12-26, 31-40 & Figure 5). It is noted that the object of Clark's light concentrator is to supply concentrated light of different colors at respective different times or simultaneously, which could enhance the image quality of color monochrome scanning and increase the speed of the image input scanning process (col. 2, ll 22-34).

Specifically, in relation to the claimed features of the present application, applicant notes that Clark discloses in relation to the concentrator of his Fig. 5 that the *focal point (a point of*

convergence of light) of the light reflected within and emitted from the light guide is at a point *external to the light guide structure* (the focal points of the light rays extended past the diffuser 30 outside of the concentrator) which is contrary to the feature of claim 1 that the sectional shape of the light guide includes *a line segment connecting the focal points (within the light guide) of said two opposite parabolas or the focal points of said two oval curves*.

Further, the sectional shape of Clark's light guide does not and could not include a line segment corresponding to an emitting face, *in addition to* a line segment connecting focal point(s) of the two opposite parabolas or two oval curves of his reflecting walls 34 (36), contrary to the requirement of claim 1. Given the disposition of the LEDs at the larger side of Clark's concentrator such that light from the LEDs is transmitted away from the larger side toward the smaller side (where the diffuser 30 is disposed), the emitting face in Clark's light guide is *the same as* the face where light emitted from his LEDs is focused due to the disposition of the LEDs directly opposite to his diffuser face.

For all the foregoing reasons, applicant respectfully requests reconsideration and withdrawal of the Examiner's rejection under 35 USC §102(b) relative to claims 1-2 and allowance of these claims.

Claim Rejection 35 USC §103

At pages 3 and 4 of the Office Action the Examiner rejected claims 3-6 under 35 USC §103(a) as being unpatentable over Clark '171 as applied to claims 1 and 2 and further in view of Fischer et al. (US 6,939,009). Regarding claims 3-5, the Examiner takes the position that Clark discloses all the limitations of the claimed invention as cited in claims 1 and 2 but does not disclose the housing or lens array for converging on a light-receiving element. Thus, the Examiner asserts that it is known that light concentrators are used for providing a means of concentrating light to an

object. Regarding claim 3, the Examiner takes the position that Fischer '009 discloses a compact work light with high illumination uniformity having a lens array 14a-c, illuminating a plurality of illuminating units 202 are illuminated toward a document (col. 5, lines 56-66), and a box 11 housing the illuminating unit and lens array.

Regarding claim 4, the Examiner takes the position that figure 7 of Fischer '009 shows how a plurality of illumination units 202 arranged as to cause lights emitted from the emitting faces of the light guides to irradiate the same area of a face of the document to be illuminated.

Further, regarding claims 5 and 6, the Examiner takes the position that figures 7 shows the illumination units on the end face of the light guide and at least two light sources to make up the illumination unit, respectively. Therefore, according to the Examiner it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the concentrator of Clark '171 with the compact work light of Fischer et al. '009 in order to provide a light concentrator which is used to supply concentrated light of different color at different times to enhance an image as taught by Clark (col. 2, lines 23-33).

Applicant's response:

Upon careful consideration, applicant respectfully traverses such rejection and submits that the Examiner's rejection of claims 3-6 is overcome for the reasons given in relation to claims 1-2 (which are not overcome by any additional teachings of Fischer relative to his compact work light), and because Fischer is non-analogous art to the present invention, whereas the proposed modification of Clark with select features of Fischer is improperly based on a suggestion coming entirely from the Examiner (guided by impermissible hindsight of applicant's disclosure), rather than from any teaching or suggestion which may be fairly gleaned from the references themselves.

Regarding the proposed modification, Fischer's compact work light is such as may be used as a "reading light, a dentist light, a head lamp. A head light and an optical projector" involving a

focused beam of light. Such a structure is very distinct from the light concentrator of Clark which is used in an optical scanning device such as xerographic, line-scan or area-scan imaging devices and involves a linear or planar output, and is also very distinct from an image reader according to the claimed invention, which also a linear beam of light output from the longitudinally extending, emitting face of the light guide.

Given these fundamental differences, Fischer is not analogous art to the present invention because: he does not disclose a light guide or image reader including a light guide, and hence is not in the same field of endeavor as the present invention; and Fischer has nothing to do with the particular problem addressed by the present invention, i.e., deterioration of the illumination of a document face when the distance between the document and the emitting face is great due to scattering of light extending over a full angle from a limited area. Such differences also exist between Fischer's work light and Clark's concentrator

Thus, persons skilled in the art would not have, in the first instance, have looked to Fischer even if such persons were considering the possibility of modifying Clark's colored light source. Further, even if such persons looked to Fischer, they would not consider the specific modification proposed by the Examiner to be obvious because the references otherwise provide no motivation for the modification.

For example, applicant respectfully submits that the teachings of Fischer and Clark teach away from each other. Specifically, the teaching of Fischer provides that one well-known property of a light pipe is that the light exiting the pipe at outface 4b, where the light pipe 4 is sufficient in length, will be extremely uniform in brightness. This uniform brightness is due to the mixing or homogenization within the light pipe which is a result of multiple reflections within the length of the pipe (col. 4, lines 16-18). Further, in the embodiment that the Examiner applies to the rejection, Fischer teaches that the light pipe is replaced with a CPC in order to achieve the same result, thus it

must be assumed that the rest of the disclosed teachings from the prior embodiment must still apply and that there must be multiple reflections within the CPC.

Quite differently, Clark discloses that in order to provide a sufficient amount of concentrated light that the light rays entering the reflector cavity from the larger, diverging end will undergo only a single reflection prior to exiting the reflector cavity at the smaller, converging end (col. 3, lines 36-40). Thus, the applied references disclose contradictory teachings and teach away from each other. Therefore a person of ordinary skill in the art would not look to Clark's concentrator to combine with the flashlight of Fischer to make obvious the present application.

For all the foregoing reasons, applicant respectfully requests reconsideration and withdrawal of the Examiner's rejection under 35 USC §103(b) relative to claim 3-6 and allowance of each of the pending claims.

Other Matters

Applicant respectfully submits that new claims 7-17 are believed to be in condition for allowance for those reasons stated in relation to claims 1, as well as based on the merits of the additional features recited in these new claims.

Conclusion

Based on all of the foregoing, applicant respectfully submits that all of the objections and rejections set forth in the Office Action are overcome, and that as presently amended, all of the pending claims are believed to be allowable over all of the references of record, whether considered singly or in combination.

Applicant requests reconsideration and withdrawal of the rejection of record, and allowance of the pending claims.

If the Examiner is not fully convinced of the patentability of all of the claims now in the application, applicant respectfully requests that the Examiner telephonically contact applicant's undersigned representative to expeditiously resolve any issues remaining in the prosecution of the application.

Favorable reconsideration is respectfully requested.

Respectfully submitted,



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